

REQUEST FOR RECONSIDERATION

Applicants thank Examiner Lee for the helpful and courteous discussion of January 27, 2004. During the discussion, Applicants' U.S. representative presented arguments that a material having a molecular structure with voids is not the same as a material having a matrix structure with voids.

In one aspect of the invention Applicants have described a method and an apparatus by which a substance present on an image carrier surface can be removed during an image forming method. During image forming it is possible that substances may be deposited on the surfaces of an image carrier device. Such substances can disfigure images produced by the image carrier device. These substances may include nitrates that are formed by the reaction of NO_2 and water on the surface of the image carrier device. Conventionally the disfiguring substances have been removed from the image carrier surface by pressing a blade or another surface onto the surface of the image carrier device. While the conventional method may sometimes be effective for removing disfiguring substances it may also create wear and tear on the surface of the image carrier device and thereby shorten the lifetime of the image carrier device.

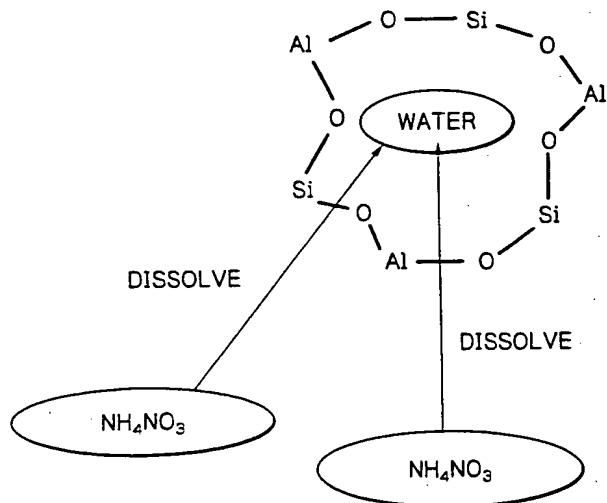
Applicants have described a method by which a solution such as an aqueous solution can be contacted with an image carrier device to remove the disfiguring substances from the device. In contacting water with the surface of the image carrier device it is important that the water is dispersed over the entire surface. Since the image carrier device surface is normally hydrophobic it is possible that water, when applied as a liquid onto the image carrier surface, may bead and cover only a portion of the surface of the image carrier device. Applicants describe an adsorbent and an adsorbent support which permits the removal of disfiguring materials from the surface of an image carrier device by contacting the surface of

the image carrier device with an adsorbent material which is able to pass and hold water in molecular voids (see generally the discussion beginning at page 11, line 18 through page 16, line 4).

The adsorbent material described in the present specification has a molecular structure that contains voids having a diameter great enough for the molecules of the disfiguring substance to pass through and at the same time contain water (page 14, lines 4-7). As a specific example, the specification discloses a zeolite crystal (page 14, lines 8-9). Zeolite crystals are described as having a three-dimensional frame structure which can absorb water and other ionic materials (page 14, line 12 through page 15, line 5).

The molecular structure of one of the invention adsorbents is shown pictorially as Figure 6 (Figure 6 is reproduced below for convenience).

Fig. 6



As can be seen in Figure 6 above, the molecular structure formed by an aluminosilicate includes an arrangement of Al-O and Si-O bonds to form a void wherein water may be trapped and, for example, nitrate ions may be attracted. As is evident from Figure 6, the water and the nitrate ion are present within the molecular structure of the invention adsorbent.

The Office rejected Claims 1-3, 19, 20, 34, 59, 60, 64, 71, 72 and 78 under 35 U.S.C. § 103(a) as unpatentable over the combination of a patent to Azuma (JP04-287081A) and Suzuki (U.S. 6,118,970).

Applicants traverse the rejection on the grounds that none of the prior art references relied upon by the Office disclose adsorbent materials having a molecular structure which contains voids which may hold or pass substances such as water.

The Office has cited to the absorber (61b) of Azuma and noted that the prior art absorber is a sponge “well known to have cells” (page 6 of the Office Action of November 7, 2003). The Office has also noted that Suzuki discloses a cleaning roller having recesses or cells in a resilient member that may be a material such as foamed silicone or foamed polyurethane.

Applicants submit that the voids, recesses or cells of the prior art absorbents are not the same as the claimed adsorbent which has voids in its molecular structure. For example, a polyurethane and/or a silicone may be a linear polymer. The cells or voids that are formed from linear polymers by foaming are not voids in the molecular structure but are voids in the macrostructure (e.g., matrix) of the silicone or polyurethane polymer.

Applicants submit that none of the prior art relied upon by the Office discloses an adsorbent having molecular voids that may contain or pass substances such as water and/or the disfiguring substance that may be present on the surface of an image carrier device. In the absence of any competent reference showing that a material such as silicone or polyurethane, or for that matter a sponge or a foam derived therefrom, has a molecular structure having voids, the present invention cannot be obvious in view of the references since the references do not disclose all of the present claim limitations.

Applicants respectfully request the withdrawal of the rejections and the passage of all now-pending claims to Issue.

Applicants submit the amendment to the claims for clarity obviates the rejections under 35 U.S.C. §112. The amendment to the claims for clarity is not intended to further limit the claimed subject matter.

The Office objected to the figures on the grounds that not all features of the claims are shown. Applicants wish to point out that the voids of the adsorbent material recited in the present claims are present on a molecular level. It is not possible to show detail appearing on a molecular level in a diagram of a normal size article of manufacture. The molecular structure of the voids of the adsorbent material is shown in, for example, Figure 6.

The Office further objected to the drawings on the grounds that the adsorbent support must be shown in cross-hatching as elastic. Figures 12 and 12 include an adsorbent support in the form of a brush or endless belt which can not be shown in cross hatching (see figures 11 and 12). As disclosed on page 18, lines 5-16 the adsorbent support can include a core of metal surrounded by an elastic body (see Figures 1-5). This section of the adsorbent support is already shown in cross-hatching.

Applicants respectfully request withdrawal of the objection to the drawings or clarification of the objection so that appropriate action may be taken.

Applicants submitted a List of Related Cases with the Information Disclosure Statement filed on January 17, 2003. The Office has not provided a signed, dated and initialed copy of the List of Related Cases, or a statement in the Office Action indicating that the List of Related Cases has been considered in the examination of this application. The Office is respectfully requested to acknowledge consideration of the List of Related Cases.

REQUEST FOR REJOINDER

Upon finding the claims which read upon the elected specie allowable, the Examiner is respectfully requested to expand her search to include the non-elected species.

Applicants submit all now-pending claims are in condition for allowance and respectfully request passage of the claims to Issue.

Respectfully submitted,

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